

Office action.”<sup>1</sup> But Applicants only amended claim 1 as follows “... said strands of wire folding back outside said slots at both axial end surfaces of said stator core, ...”. This amendment does not change the meaning of this phrase. That is, previously, the phrase required “axial end surfaces”, i.e., more than one. And the stator core only includes two axial end surfaces. Therefore, the claim inherently already included the limitation that the strands of wire be folded back outside the slots at “both axial end surfaces” of the stator core. There has been no change in the elements of the claim. Applicants amendment served only to emphasize what was already included in the claim. Therefore, such an amendment cannot be the reason for the Examiner’s new grounds of rejection.

In light of the above, the finality of this Office Action is improper, and should be withdrawn.

#### **Claim Rejections - 35 U.S.C. § 103**

- The Examiner rejected claims 1 and 3-6 under §103(a) as being unpatentable over Japanese 3-226251 to Kusase (hereinafter Kusase) in view of US Patent 4,102,040 to Rich (hereinafter Rich). Applicants respectfully traverse this rejection because the references fail to establish *prima facie* obviousness in that they do not teach or suggest every element as set forth in Applicants’ claims.

Claim 1 sets forth an alternator comprising a rotor, a stator comprising a stator core surrounding the rotor, and a polyphase stator winding installed in the stator core, the stator core being formed with a number of slots, the polyphase stator winding comprising a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction within said slots at intervals of a predetermined number of slots, the strands of wire folding back outside the slots at both axial end surfaces of the stator core.

---

<sup>1</sup> Office Action at page 5, item 7.

The Examiner asserts that Kusase teaches certain elements in Applicants' claim 1 except for an abutting portion on the core used to form an annular shape by joining core ends at the abutting portion.<sup>2</sup> In contrast to that asserted by the Examiner and to that set forth in claim 1, however, Kusase fails to teach or suggest a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction within said slots at intervals of a predetermined number of slots to form one phase of a stator winding. Instead, the strand of wire in Kusase is repeatedly wound at an interval of a predetermined number of slots to form one phase of a stator winding (see Fig. 1(a), Fig. 4, Fig. 9). Therefore, Kusase fails to teach or suggest a polyphase winding comprising a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction at intervals of a predetermined number of slots, as set forth in claim 1.

The Examiner cited Rich as teaching a method of forming an alternator core stack.<sup>3</sup> But Rich does not teach or suggest a polyphase winding comprising a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction at intervals of a predetermined number of slots to form one phase of a stator winding. Therefore, even assuming, *arguendo*, that one of ordinary skill in the art were motivated to combine Kusase and Rich as suggested by the Examiner, any such combination would still not render obvious Applicants' claim 1. Likewise, Kusase in view of Rich does not render obvious dependent claims 3-6.

- The Examiner rejected claims 1-6 under § 103(a) as being unpatentable over Kusase in view of Japanese Patent 1-252141 to Shinichiro (hereinafter Shinichiro). Applicants respectfully

---

<sup>2</sup> Office Action at page 2, item 2, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs.

<sup>3</sup> Office Action at paragraph bridging pages 2 and 3.

traverse this rejection because the references fail to establish *prima facie* obviousness in that they do not teach or suggest every element as set forth in Applicants' claims.

Again, claim 1 sets forth a polyphase winding comprising a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction at intervals of a predetermined number of slots to form one phase of a stator winding.

The Examiner asserts that Kusase teaches certain elements in Applicants' claim 1 except for an abutting portion on the core used to form an annular shape by joining core ends at the abutting portion.<sup>4</sup> In contrast to that asserted by the Examiner and to that set forth in claim 1, however, Kusase fails to teach or suggest a polyphase winding comprising a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction at intervals of a predetermined number of slots to form one phase of a stator winding.

The Examiner cited Shinichiro as teaching a stator core having plural arc-shaped divided core portions and an abutting portion.<sup>5</sup> But Shinichiro does not teach or suggest a polyphase winding comprising a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction at intervals of a predetermined number of slots to form one phase of a stator winding. Therefore, even assuming, *arguendo*, that one of ordinary skill in the art were motivated to combine Kusase and Shinichiro as suggested by the Examiner, any such combination would still not render obvious Applicants' claim 1. Likewise, Kusase in view of Shinichiro does not render obvious dependent claims 2-6.

With respect to claim 2, Applicants traverse this rejection for the following additional reasons. Shinichiro does not teach or suggest plural arc-shaped divided core portions. Instead,

---

<sup>4</sup> Office Action at page 3, item 3, 1<sup>st</sup> paragraph.

<sup>5</sup> Office Action at page 3, item 3, 2<sup>nd</sup> paragraph.

the reference numeral 4 is a tooth of the stator core, wherein the teeth form slots for the winding. Thus, like Rich, Shinichiro teaches only one core portion that is bent into a circular shape so that the ends are abutted and welded together. See Figs. 1 and 2. On the other hand, one embodiment of the present invention comprises plural arc-shaped divided core portions 15A. See Figs. 2 and 3, for example. The plural arc-shaped divided core portions 15A are then assembled together to form the stator core 15 that further includes a number of slots. That is, Shinichiro fails to teach or suggest plural arc-shaped divided core portions that form a stator core being formed with a number of slots, as set forth in claim 2.

- The Examiner rejected claim 7 under § 103(a) as being unpatentable over Kusase and Rich, or Kusase and Shinichiro, and further in view of US Patent 4,692,646 to Gotou (hereinafter Gotou). Applicants respectfully traverse this rejection because the references fail to establish *prima facie* obviousness in that they do not teach or suggest every element as set forth in Applicants' claims.

Again, claim 1 sets forth a polyphase winding comprising a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction at intervals of a predetermined number of slots to form one phase of a stator winding.

The Examiner asserts that Kusase, Rich and Shinichiro teach certain elements in Applicants' claim 7 except for stator teeth of different sizes.<sup>6</sup> As noted above, however, Kusase, Rich, and Shinichiro fail to teach or suggest a polyphase winding comprising a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction at intervals of a predetermined number of slots to form one phase of a stator winding.

---

<sup>6</sup> Office Action at page 4, item 4, 1<sup>st</sup> paragraph.

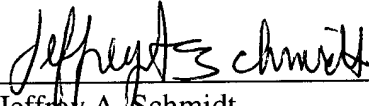
The Examiner cited Gotou as teaching a stator core having long and short teeth of different circumferential width.<sup>2</sup> But Gotou does not teach or suggest a polyphase winding comprising a number of winding portions in which long strands of wire are wound so as to alternately occupy an inner layer and an outer layer in a slot depth direction at intervals of a predetermined number of slots to form one phase of a stator winding. Therefore, even assuming, *arguendo*, that one of ordinary skill in the art were motivated to combine Kusase, Rich, and Gotou, or to combine Kusase, Shinichiro, and Gotou, as suggested by the Examiner, any such combinations would still not render obvious Applicants' claim 7.

### **Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
Jeffrey A. Schmidt  
Registration No. 41,574

SUGHRUE MION, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, D.C. 20037-3213  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

Date: November 8, 2002

---

<sup>2</sup> Office Action at page 4, item 4, paragraph 2.